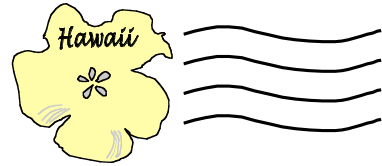


ALOHA EVERYONE!



My name is Keona, and I'm so glad to be a part of the team! My family and I are excited to assist you junior scientists in your investigation of Hawaii. Our small town of Kea'au, on the Big Island, is close to Kilauea Volcano. This is a great place to research for your project because Kilauea is one of the most active volcanoes in the world!

I remember my grandfather telling me the story of this volcano, a story that goes way back into the generations of my family. A long time ago, when European explorers first began appearing on the Hawaiian Islands, a man named Kamehameha led an army. He was about to attack an area called Pau, and the men from that region were gathering together to defend it. It was then that Kilauea began rumbling – it sent a dark cloud into the air. Then the thunder and lightning started, and the cloud rose and grew until the whole area was covered in darkness, blocking out the sun. The men could only see the glow from the volcano. As it erupted, Kilauea threw up sand and burning rock, which killed most of the men, even though they were miles away from the top of the mountain when it erupted. The few survivors returned to their home, but they didn't stand a chance against Kamehameha. Kamehameha could tell from the survivors' stories that Pele, goddess of fire, favored him over all the other leaders. This certainty helped him conquer and unite all the islands, and he became the ruler of Hawaii.



Hawaii is a chain of islands in the middle of the Pacific Oceans. The land area of the eight major islands is the emerged tops of volcanic mountains. Volcanic activity has become dormant, with the exception of the big island, which has frequent lava flows.



USGS

With stories like this one about the dangers of Kilauea, it may seem strange that so many people come to visit the volcano. But most of the time Hawaiian volcanoes are not dangerous. In fact, my older sister Lea used to lead tours at the Hawaii Volcanoes National Park, showing Kilauea to visitors. Hawaiian volcanoes usually have lava that comes out quietly or spouts straight up like a fountain. It's rare for them to spit out rocks and clouds of ash like in this old story.

I can only remember one time that Kilauea did that – in the late 1990s. I was still little then, but I remember all the commotion. The scientists had been warning about an

Hawaiian Islands

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eruption for days; I guess they had some way of figuring out what was going to happen. My parents made Lea stop giving tours at the park after that, but she still works in a village near Kilauea. Right now though, it's perfectly safe to view the volcano and its lava flows.

The lava flows are one of the most spectacular sights at the volcano; if you're ever here visiting, you have to check them out. While most of the lava I've seen has come out of the mountain quietly, it doesn't always move slowly. There are two kinds of lava; one is called *pahoehoe* and



Smooth pahoehoe lava flow on the left sits next to jagged and rocky a'a lava on the right.

www.biosbcc.net/ocean/marinesci/02ocean/hwgeo.htm

the other is *a'a*. *Pahoehoe* is thin, fast moving lava – it can move as fast as 35 mph! That's faster than cars can drive on some of the mountain roads! When Kilauea really erupted, we saw firefighters spraying the *pahoehoe* with water to slow it down. It hissed and steamed, but it stopped moving so fast. *A'a* lava moves more slowly, but because of this, it forms rocky, rough surfaces when it cools. Ground surfaces formed from *a'a* lava can be sharp and painful to walk across.

Speaking of lava flows, you should see the way lava comes out of underground tubes right into the

ocean. As it hits the water, the lava creates giant clouds of steam. It also creates land underneath the water! I think that the best part of living near the volcano is seeing the island grow right in front of my eyes – when the hot lava runs into the cool sea, new land is created. Over 50 acres of new land are created every year! I've heard that over 90% of the surface of Hawaii (my island) is covered by lava less than 1,000 years old, so it's pretty young compared to other islands, and it's all due to the volcanoes erupting!

One of my favorite spots in the park is the Kilauea caldera. A caldera is the large, shallow depression at the summit of a volcano. When the lava flows out from under the volcano, the overlying rock doesn't have anything to support it, and it collapses into a shallow bowl. I've hiked right up to the caldera but not across it.



Kilauea Caldera

http://www.bigislandcabanas.com/1welcome/9volcano/volcanoes_natl_park.html

I recommend that anyone who's on the Big Island visiting Kilauea also stop by Mauna Loa Volcano. My cousins live close to it, so I've visited there. It's much taller than Kilauea and the largest active volcano in the world, but I don't think it's as exciting. Of the five volcanoes that make up the island of Hawaii, I think Kilauea is the best.

There's more than just the main island of Hawaii to investigate. There are eight main islands in the state of Hawaii, but the full island chain includes almost twenty. They're all spread out in a line – it looks sort of like a necklace of shells – stretching northwest from my island. When I've flown over them in a plane, it's easy to imagine that they're all a string of mountains connected under the water. The Big Island is the newest and the largest, while the island farthest northwest is the oldest one. As the islands get farther from my own, they also get smaller and smaller. Mine is the only island still spewing lava and forming new land, but I've heard that it's moving 12 cm (5 in.) per year, so who knows what will happen in the next few years?



I've also heard that there's a diving team exploring a new volcano off the coast of Hawaii. Maybe that's something you can look into as well. It's supposedly a new island forming underwater, called Loihi. One day it will build high enough to form a new island above water.

The eight main islands in the state of Hawaii.
http://www.netstate.com/states/geography/hi_geography.htm

If you ever get here to see the volcano for yourself, you should take some time off from your scientific exploration and enjoy the sun and the beaches a little. I can show you Hawaii's famous black sand beaches. In the meantime, I hope this information helps you in your investigation!

Your friend,
Keona Kawena
19°N 155°W